

Changes in Workload License Charges with the zEnterprise

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Version 1103A (01MAR2011)

March 1, 2011
Session 8297

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Goals, Plan for the Next 60 Minutes

- Very Quick Sub-Capacity Pricing Overview
- z196 Changes
 - No further HW MSU to SW MSU separation on z196s
 - Advanced Workload License Charges
 - New, Announced in January 2011, Available with Feb 2nd through March 1st data is Integrated Workload License Charges
 - New, Published 10 February 2011, Available with Feb 2nd through March 1st data is GSSP reduction for DB2 type 2 connections

Workload License Charges

- Over the Last 25 Years the Correlation Between MIPS and Software Value Has Been Lost
- LPARs Allow for More Granular Capacities
- Software Must be More Granular Also
- So Now IBM Provides LPAR Based Pricing
 - Is LPAR Pricing Fair?
 - Perhaps Not, but it is Better than Charging for Software Based on the Whole “Machine”

Workload License Charges

- WLC is IBM's Attempt to:
 - Remove the SW Cost Obstacle that Holds Back HW Sales
 - Lower Mainframe Total Cost of Ownership
- WLC Is Not Static – It is Evolving
- IBM Is Changing WLC at Least One Time Per Year
 - July 2010: AWLC for z196 HW
 - January 2011: Integrated Workload Pricing
 - February 2011: Improved GSSP for DB2 Type 2 Connections to WebSphere GSSP Products
- WLC Started Simply in October 2000
- After 11 Years of Evolution Workload License Charges is Now Quite Complicated!

zSeries, z/OS and zWorkload zPricing

Metric	Description	Sub-Capacity Allowed?	Aggregation Allowed?	Qualified Hardware												
				9672 & All Others	MP3K	z/800 Standalone	z/800 In a Qualified Sysplex	z/890 Standalone	z/890 In PricingPlex	z/900, z/990, z9-109 in Pricing Plex	z9BC, z10BC Standalone	z9BC, z10BC in Pricing Plex	z9EC, z10EC in Pricing Plex	z196 Standalone	z196 in Pricing Plex	
MLC	FLAT	Much Older Fixed MLC		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MLC	PSLC	Parallel Sysplex License Charge	No	Yes	Yes		Yes		Yes		Yes		Yes		Yes	Yes
MLC	ULC	S/390 Measured Usage License Charge	No (Pay for actual CPU usage by the product)	Yes	If PSLC	if GOLC		Part of PSLC Sysplex		Part of PSLC Sysplex	Part of PSLC Sysplex		Part of PSLC Sysplex	Part of PSLC Sysplex		Part of PSLC Sysplex
MLC	zELC	zSeries Entry License Charge	No, Model Based Only		or equivalent to z800		Yes		110 Model only	110 Model only		A01 Model Only	A01 Model Only			
MLC	AWLC	Advanced Workload License Charges	Yes	Yes											Yes	Yes
MLC	WLC - Variable	WorkLoad License Charge - Variable pricing based on MSU	Yes	Yes			Yes	Yes	No, Use EWLC	Yes	Yes	No, Use EWLC	Yes	Yes	No	Yes
MLC	FWLC	WorkLoad License Charge - Fixed Price Per Footprint	Yes	Effectively NO			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MLC	EWLC Sub Cap	Entry Workload License Charge	Yes	No			Yes		Yes	No, Consider WLC		Yes	No, Consider WLC			
MLC	EWLC Full Cap	Entry Workload License Charge		No	OS/390 Allowed		OS390 allowed, or not zArch		OS390 allowed	OS390 allowed		OS390 allowed	OS390 allowed			
MLC	TWLC	Tiered Workload License Charge		No			Yes		Yes			Yes				
MLC	NALC	New Application License Charge (not available after z/OS 1.8)	Yes w/WLC, No w/PSLC	No	w/PSLC		No, Use z/OS.e	No, Use z/OS.e	No, Use z/OS.e	Yes	Yes	No, Use z/OS.e	No, Use z/OS.e	No, Use zNALC	No, Use zNALC	No, Use zNALC
MLC	zNALC	System z New Application License Charges	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OTC (S&S)	Value Unit	Value Unit (Tivoli, Tools, etc)	Yes, Execution, Reference & z/OS Based	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

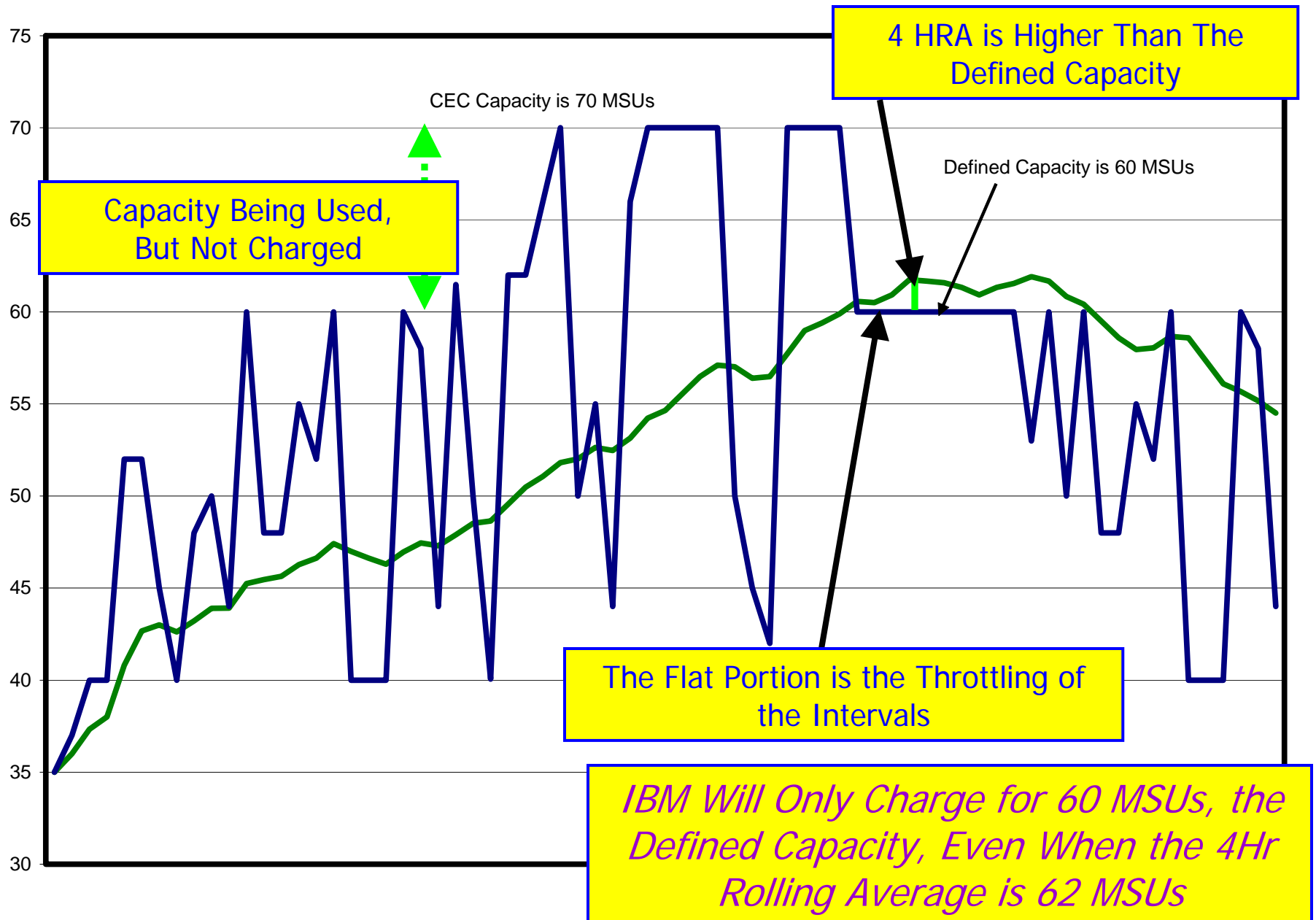
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zSeries, z/OS and zWorkload zPricing

Metric	Description	Sub-Capacity Allowed?	Aggregation Allowed?	Qualified Hardware						
				z9BC, z10BC Stand-Alone	z9BC, z10BC in Pricing Plex	z9EC, z10EC Stand-Alone	z9EC, z10EC in Pricing Plex	z196 Stand-Alone	z196 in Pricing Plex	
MLC	FLAT	Much Older Fixed MLC			Yes	Yes	Yes	Yes	Yes	Yes
MLC	AWLC	Advanced Workload License Charges, Full and Sub-Cap	Yes	Yes					Yes	Yes, If all z196
MLC	VWLC	WorkLoad License Charge, Full and Sub-Cap	Yes	Yes	No, Use EWLC	Yes	Yes	Yes	No	Yes, Mixed
MLC	FWLC	WorkLoad License Charge - Fixed Price Per Footprint	Yes	Effectively NO	Yes	Yes	Yes	Yes	Yes	Yes
MLC	EWLC	Entry Workload License Charge	Yes	No	Yes	No, Consider WLC				
MLC	TWLC	Tiered Workload License Charge		No	Yes					
MLC	zNALC	System z New Application License Charges	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OTC (S&S)	Value Unit	Value Unit (Tivoli, Tools, WebSphere App Server, etc.)	Most, Execution, Reference & z/OS Based	Yes	Yes	Yes	Yes	Yes	Yes	Yes

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4-Hour Rolling Average & Defined Capacity



z196: New Mainframe Available September 2010

- With the previous 3 mainframe technologies IBM separated the hardware's ability to run your work, from the "size" of the machine used for software pricing
 - I refer the MSUs calculated from the SRM constant as the "Hardware MSUs" and the MSUs announced for each machine, used for software pricing, as "Software MSUs"
- 1,000 HW MSU Workload Requires Approximately:
 - 1,000 SW MSUs on z900
 - 900 SW MSUs on z990
 - 770 SW MSUs on z9EC
 - 680 SW MSUs on z10EC
 - 680 SW MSUs on z196 (YM-WILL-Vary, try zPCR!)
- No further separation on z196

No Further Separation of HW MSUs and SW MSUs

- This is a significant change
 - What happens with the next machine?
- The separation in the past changed how machines were “measured” for IBM & ISVs
 - Depending on your contracts with other Vendors
- Advanced Workload License Charges provides a discount depending on your software stack and “size of your shop”
 - AWLC has no effect on the software charges you pay to other vendors
- Separation provided a “plateau” or flattening of MSUs while your workload grew to consume the additional separation

AWLC Only available on z196s

- The savings is provided through changes in Pricing Tables for sub-capacity eligible MLC products
- Two new tiers are “activated”

EWLC Tiers	EWLC
EWLC Base, 3 MSUs	5,009
3 to 17 MSUs	71
18 to 30 MSUs	258
31 to 45 MSUs	400
46 to 87 MSUs	126
88 to 175 MSUs	126
176 to 260 MSUs	94
260+ MSUs	94

VWLC & AWLC Tiers	VWLC	AWLC
Base, includes 3 MSUs	5,009	5,009
3 to 45 MSUs	270	260
46 to 175 MSUs	126	119
176 - 315 MSUs	94	90
316 - 575 MSUs	71	68
576 to 875 MSUs	53	51
875 to 1315 MSUs	53	49
1316 to 1975 MSUs	53	47
1976+ MSUs	53	47

- Note, EWLC does not exist on z196
- NO Savings or plateau for IPLA products

- Should lower MLC software charges if you are using VWLC on a standalone machine or in a PricingPlex
 - You Must Sign “ICA Attachment for IBM System z Advanced Workload License Charges (Z125-8538)”
- “Transition Charges for Sysplexes” provides a portion of the AWLC’s value while you have mixed hardware technologies in a PricingPlex
- To better understand the value of AWLC compared to VWLC study “your” software stack

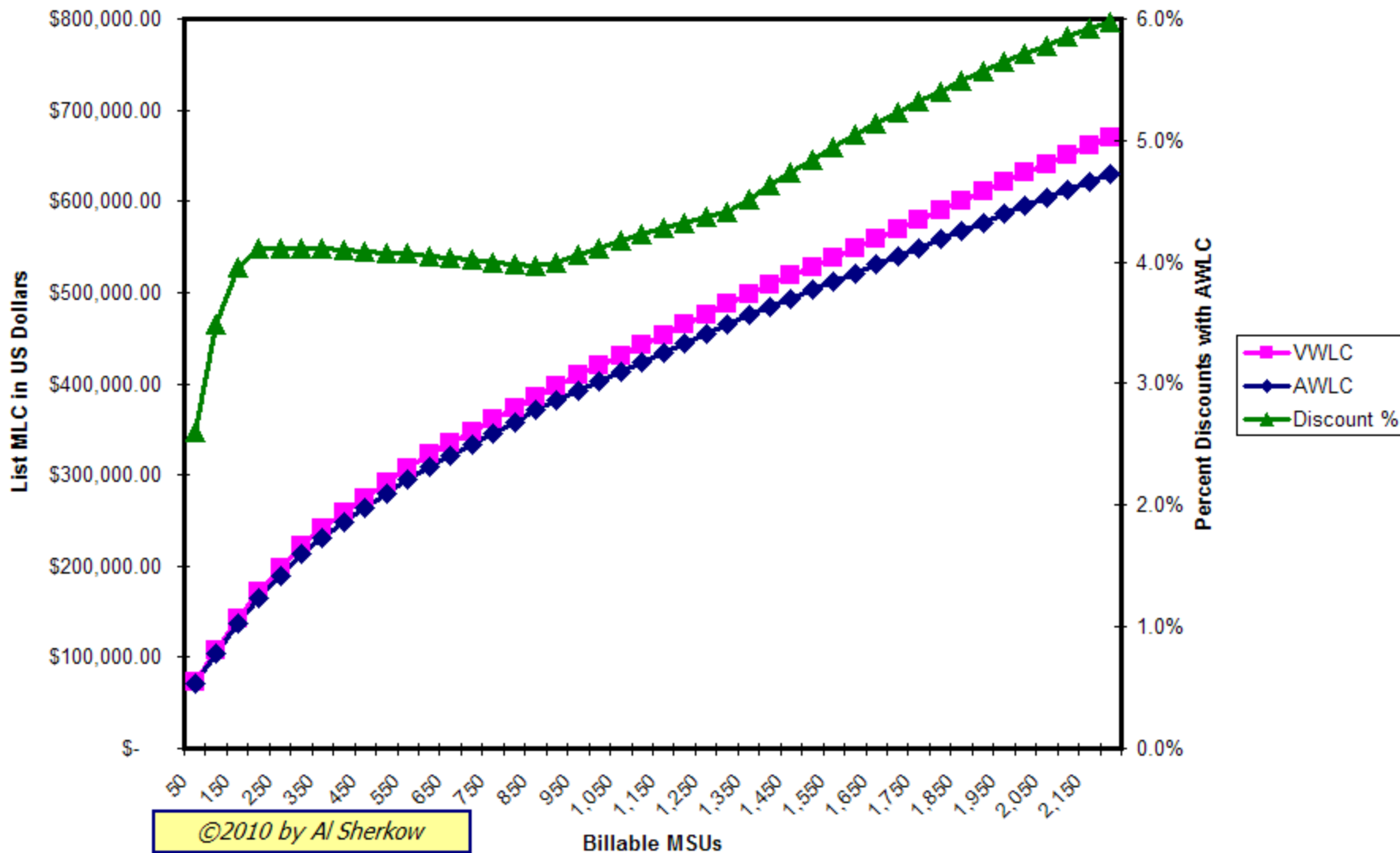
Sample Software Stack

Pricing Plex		LCS 2063-AG1							
Machine Types		2097-716 1264 MSUs							
Announced MSUs		1264							
Default Machine Sub-Capacity MSUs		800							
Sub-Capacity MSUs Percent of Announced MSUs		63.3%	Full Capacity				Variable Capacity		
PRODID	PRODNAME	Count of Machines	Estimated Full Capacity PSLC Price	Estimated Full Capacity VWLC Price	Estimated Full Capacity EWLC Price	Estimated Full Capacity AWLC Price	Estimated Variable VWLC Price	Estimated Variable EWLC Price	Estimated Variable AWLC Price
5694-A01	Z/OS V1 BASE	1	\$ 241,244.00	\$ 167,368.00	\$ 289,741.00	\$ 159,373.00	\$ 137,114.00	\$ 190,445.00	\$ 130,586.00
5694-A01	Z/OS V1 HCM	1	\$ 420.00	\$ 449.00	\$ 420.00	\$ 449.00	\$ 449.00	\$ 420.00	\$ 449.00
5694-A01	Z/OS V1 HLASM TOOLKIT	1	\$ 109.00	\$ 109.00	\$ 109.00	\$ 109.00	\$ 109.00	\$ 109.00	\$ 109.00
5694-A01	Z/OS V1 RMF	1	\$ 9,563.00	\$ 8,395.00	\$ 11,516.00	\$ 8,395.00	\$ 6,464.00	\$ 7,804.00	\$ 6,464.00
5694-A01	Z/OS V1 SDSF	1	\$ 4,883.00	\$ 3,781.00	\$ 5,753.00	\$ 3,781.00	\$ 3,242.00	\$ 3,897.00	\$ 3,242.00
5694-A01	Z/OS V1 SECURITY SERVER	1	\$ 13,319.00	\$ 10,835.00	\$ 16,147.00	\$ 10,705.00	\$ 8,829.00	\$ 11,043.00	\$ 8,699.00
5625-DB2	DB2 V8	1	\$ 94,368.00	\$ 91,588.00	\$ 122,556.00	\$ 86,934.00	\$ 69,316.00	\$ 82,652.00	\$ 66,368.00
5655-M15	CICS TS FOR Z/OS V3.1	1	\$ 106,075.00	\$ 105,857.00	\$ 139,846.00	\$ 100,947.00	\$ 80,337.00	\$ 94,838.00	\$ 77,133.00
5655-L82	WEbsp MQ V6	1	\$ 46,825.00	\$ 46,131.00	\$ 60,728.00	\$ 43,955.00	\$ 34,531.00	\$ 40,776.00	\$ 33,208.00
5697-ENV	TIV NETVIEW FOR Z/OS	1	\$ 28,970.00	\$ 29,316.00	\$ 37,333.00	\$ 28,225.00	\$ 21,892.00	\$ 25,269.00	\$ 21,190.00
5655-G53	COBOL V3 FULL FUNCTION	1	\$ 20,586.00	\$ 15,101.00	\$ 16,309.00	\$ 15,059.00	\$ 10,925.00	\$ 11,205.00	\$ 10,883.00
Totals			\$ 566,362.00	\$ 478,930.00	\$ 700,458.00	\$ 457,932.00	\$ 373,208.00	\$ 468,458.00	\$ 358,331.00

- Obviously EWLC is not a metric for this size of machine
- For this sample stack, all products priced at 1,264 and 800 MSUs
 - Savings to move from Sub-Cap WLC \$373,208 to Sub-Cap AWLC \$358,311. Monthly savings is \$14,877

"Sample" Software Stack Every 50 MSUs

(z/OS, DB2 V8, CICS V3, MQ V6, COBOL, NetView)



Remember this discount is for this "sample" software stack, your particular discount may be higher or lower

Software Savings to Move to z196/AWLC

LCS_PRICING_V06_008.XLS											
	A	B	C	D	E	F	G	H	I	J	
1	LPAR Capacity and Software Usage Analysis ©2011 by I/S Management Strategies, Ltd.										
2	This Page Shows the Matrix of Variable WLC Products and Machines						The License Key Expires on 30-Dec-2011				
3								Pricing Plex	LCS 2063-AG1		
4	Total All Machines Announced MSUs							3262			
5	Total of Sub-Capacity MSUs set for All Machines							2764			
6	Machine Number							1	2		
7	Your Machine ID							2097-QQQQ	2097-KKKK		
8	Your Familiar Name for the Machine ID										
9	Machine Type (Drop Down List)							2097-722 1631 MSUs		2097-722 1631 MSUs	
10	Announced MSUs							1631	1631		
11	Maximum Machine Sub-Capacity MSUs (From Column Below)							1210	1554		
12	Sub-Capacity MSUs Percent of Announced MSUs							74.2%	95.3%		
13	Technology Dividend for Newer Machines							100.00%	100.00%		
14	PROID	FunctionID	Product Name	Sub-Cap Eligible?	Num of Machines	Full Cap MSUs	Sub Cap MSUs	Estimated VWLC Price			
15	5694-A01	S00T4FR	Z/OS V1 BASE	Y	2	3,262	2,764	\$ 230,032	1210	1554	
16	5694-A01	S00T4FZ	Z/OS V1 C/C++ WITHOUT DEBUG	Y	1	1,631	1,210	\$ 8,465	1210		
17	5694-A01	S00T4GB	Z/OS V1 RMF	Y	2	3,262	2,764	\$ 12,157	1210	1554	
18	5694-A01	S00T4GC	Z/OS V1 SDSF	Y	2	3,262	2,764	\$ 5,281	1210	1554	
19	5694-A01	S00T4GF	Z/OS V1 SECURITY SERVER	Y	1	1,631	1,210	\$ 10,619	1210		
20	5694-A01	S00T4G0	Z/OS V1 DFSMS DSSSHM	Y	2	3,262	2,764	\$ 20,811	1210	1554	
21	5694-A01	S00T4G3	Z/OS V1 DFSORT	Y	2	3,262	2,764	\$ 3,480	1210	1554	
22	5625-DB2	S00X44M	DB2 V8	Y	2	3,262	2,691	\$ 160,084	1200	1491	
23	5655-M15	S0118T7	CICS TS FOR Z/OS V3.1	Y	2	3,262	2,691	\$ 184,342	1200	1491	
24	5655-L82	S011P8R	WEBSP MQ V6	Y	2	3,262	2,691	\$ 81,806	1200	1491	
25	5655-S71	S014DVZ	ENTERPRISE COBOL V4	Y	2	3,262	2,574	\$ 26,999	1181	1393	
26	5655-A01	S000S02	IMAGEPLUS OBJECT SERVER V2	N	1	1,631	1,631	\$ 625	1631		
27	5655-A02	S0017TX	IMAGEPLUS LIBRARY SERVER V2	N	1	1,631	1,631	\$ 55,000	1631		
28	5655-M32	S012556	ENHANCED ACIF	N	1	1,631	1,631	\$ 400		1631	
29	5655-002	S00176J	APPL. SUPPORT FACILITY	N	1	1,631	1,631	\$ 970	1631		
30	5655-002	S00XJ55	ASF V3 R3 BASE INCL COMP FTR	N	1	1,631	1,631	\$ 3,499	1631		
31	5655-041	S000WWF	ACF/SSP VERSION 4 MVS	N	2	3,262	3,262	\$ 2,702	1631	1631	
32	5665-366	S00064S	SDF II MVS	N	2	3,262	3,262	\$ 4,138	1631	1631	
33	5688-169	S00001C	GDQF VERSION 2	N	2	3,262	3,262	\$ 2,164	1631	1631	
34	5688-190	S000D2D	PPFA/370	N	2	3,262	3,262	\$ 520	1631	1631	
35	5688-191	S0007LM	OGL/370	N	2	3,262	3,262	\$ 740	1631	1631	
36	5748-XXE	S0011BL	DLF DOCUMENT LIBRARY FACILITY	N	1	1,631	1,631	\$ 201	1631		
37	5748-XX9	S0011KZ	DCF DOC COMPOSITION FACILITY	N	2	3,262	1,902	\$ 3,960	1066	836	
38	5688-023	S0003KB	COBOL II COMPILER AND LIBRARY	N	2	3,262	2,231	\$ 4,938	1020	1211	

- Customer Example starting with Two z10s

Two z10s, VWLC: \$823,933USD

Pricing Plex		LCS 2063-AG1	Source Code Level: 06.01 17DEC2010, XFRPRICE Change Level: 04.185						
Machine ID		2097-QQQQ	2097-KKKK						
Machine Types		2097-722 1631 MSUs	2097-722 1631						
Announced MSUs		1631	1631						
Default Machine Sub-Capacity MSUs		1210	1554	0	0	0	0	0	0
Technology Dividend Used for Each Machine		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Total All Machines Announced MSUs		3,262							
Total of Sub-Capacity MSUs set for All Machines		2,764							
Sub-Capacity MSUs Percent of Announced MSUs		84.7%	VWLC Full Capacity		Variable WLC Sub-Capacity (VWLC)			Advanced WLC Sub Capacity (AWLC)	
PROID	PRODNAME	Count of Machines	MSUs for Full-Capacity WLC	Estimated Price	Sub Capacity WLC MSUs	Estimated SubCap WLC Price	Savings FullCap WLC to Variable WLC	Estimated SubCap Advanced WLC Price	Savings SubCap WLC to Advanced WLC
5694-A01	Z/OS V1 BASE	2	3,262	\$ 248,458.00	2,764	\$ 230,032.00	\$ 18,426.00	219,775	\$ 10,257.00
5694-A01	Z/OS V1 C/C++ WITHOUT DEBUG	1	1,631	\$ 9,833.00	1,210	\$ 8,465.00	\$ 1,368.00	8,465	\$ -
5694-A01	Z/OS V1 RMF	2	3,262	\$ 13,153.00	2,764	\$ 12,157.00	\$ 996.00	12,157	\$ -
5694-A01	Z/OS V1 SDSF	2	3,262	\$ 5,779.00	2,764	\$ 5,281.00	\$ 498.00	5,281	\$ -
5694-A01	Z/OS V1 SECURITY SERVER	1	1,631	\$ 11,987.00	1,210	\$ 10,619.00	\$ 1,368.00	10,489	\$ 130.00
5694-A01	Z/OS V1 DFSMS DSSHSM	2	3,262	\$ 22,803.00	2,764	\$ 20,811.00	\$ 1,992.00	20,681	\$ 130.00
5694-A01	Z/OS V1 DFSORT	2	3,262	\$ 3,978.00	2,764	\$ 3,480.00	\$ 498.00	3,480	\$ -
5625-DB2	DB2 V8	2	3,262	\$ 187,492.00	2,691	\$ 160,084.00	\$ 27,408.00	146,970	\$ 13,114.00
5655-M15	CICS TS FOR Z/OS V3.1	2	3,262	\$ 215,747.00	2,691	\$ 184,342.00	\$ 31,405.00	169,596	\$ 14,746.00
5655-L82	WEBSP MQ V6	2	3,262	\$ 96,081.00	2,691	\$ 81,806.00	\$ 14,275.00	75,400	\$ 6,406.00
5655-S71	ENTERPRISE COBOL V4	2	3,262	\$ 33,191.00	2,574	\$ 26,999.00	\$ 6,192.00	25,656	\$ 1,343.00
5655-A01	IMAGEPLUS OBJECT SERVER V2	1	1,631	\$ 625.00	1,631	\$ 625.00	\$ -	625	\$ -
5655-A02	IMAGEPLUS LIBRARY SERVER V2	1	1,631	\$ 55,000.00	1,631	\$ 55,000.00	\$ -	55,000	\$ -
5655-M32	ENHANCED ACIF	1	1,631	\$ 400.00	1,631	\$ 400.00	\$ -	400	\$ -
5655-002	APPL. SUPPORT FACILITY	1	1,631	\$ 970.00	1,631	\$ 970.00	\$ -	970	\$ -
5655-002	ASF V3 R3 BASE INCL COMP FTR	1	1,631	\$ 3,499.00	1,631	\$ 3,499.00	\$ -	3,499	\$ -
5655-041	ACF/SSP VERSION 4 MVS	2	3,262	\$ 2,702.00	3,262	\$ 2,702.00	\$ -	2,702	\$ -
5665-366	SDF II MVS	2	3,262	\$ 4,138.00	3,262	\$ 4,138.00	\$ -	4,138	\$ -
5688-169	GDQF VERSION 2	2	3,262	\$ 2,164.00	3,262	\$ 2,164.00	\$ -	2,164	\$ -
5688-190	PPFA/370	2	3,262	\$ 520.00	3,262	\$ 520.00	\$ -	520	\$ -
5688-191	OGL/370	2	3,262	\$ 740.00	3,262	\$ 740.00	\$ -	740	\$ -
5748-XXE	DLF DOCUMENT LIBRARY FACILITY	1	1,631	\$ 201.00	1,631	\$ 201.00	\$ -	201	\$ -
5748-XX9	DCF DOC COMPOSITION FACILITY	2	3,262	\$ 3,960.00	1,902	\$ 3,960.00	\$ -	3,960	\$ -
5688-023	COBOL II COMPILER AND LIBRARY	2	3,262	\$ 4,938.00	2,231	\$ 4,938.00	\$ -	4,938	\$ -
Totals				\$ 928,359.00		\$ 823,933.00	\$ 104,426.00	\$ 777,807.00	\$ 46,126.00

One z10, One z196, AWLC Transition Plan: \$799,215USD

Machine ID	2097-QQQQ	2097-KKKK							
Machine Types	2817-715 1648 MSUs	2097-722 1631							
Announced MSUs	1648	1631							
Default Machine Sub-Capacity MSUs	1210	1554	0	0	0	0	0	0	0
Technology Dividend Used for Each Machine	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Total All Machines Announced MSUs	3,279								
Total of Sub-Capacity MSUs set for All Machines	2,764								
Sub-Capacity MSUs Percent of Announced MSUs	84.3%	VWLC Full Capacity		Variable WLC Sub-Capacity (VWLC)			Advanced WLC Sub Capacity (AWLC)		
PROID	PRODNAM	Count of Machines	MSUs for Full-Capacity WLC	Estimated Price	Sub Capacity WLC MSUs	Estimated SubCap WLC Price	Savings FullCap WLC to Variable WLC	Estimated SubCap Advanced WLC Price	Savings SubCab WLC to Advanced WLC
5694-A01	Z/OS V1 BASE	2	3,279	\$ 249,087.00	2,764	\$ 230,032.00	\$ 19,055.00	219,775	\$ 10,257.00
5694-A01	Z/OS V1 C/C++ WITHOUT DEBUG	1	1,648	\$ 9,884.00	1,210	\$ 8,465.00	\$ 1,419.00	8,465	\$ -
5694-A01	Z/OS V1 RMF	2	3,279	\$ 13,187.00	2,764	\$ 12,157.00	\$ 1,030.00	12,157	\$ -
5694-A01	Z/OS V1 SDSF	2	3,279	\$ 5,796.00	2,764	\$ 5,281.00	\$ 515.00	5,281	\$ -
5694-A01	Z/OS V1 SECURITY SERVER	1	1,648	\$ 12,038.00	1,210	\$ 10,619.00	\$ 1,419.00	10,489	\$ 130.00
5694-A01	Z/OS V1 DFSMS DSSHSM	2	3,279	\$ 22,871.00	2,764	\$ 20,811.00	\$ 2,060.00	20,681	\$ 130.00
5694-A01	Z/OS V1 DFSORT	2	3,279	\$ 3,995.00	2,764	\$ 3,480.00	\$ 515.00	3,480	\$ -
5625-DB2	DB2 V8	2	3,279	\$ 188,308.00	2,691	\$ 160,084.00	\$ 28,224.00	146,970	\$ 13,114.00
5655-M15	CICS TS FOR Z/OS V3.1	2	3,279	\$ 216,682.00	2,691	\$ 184,342.00	\$ 32,340.00	169,596	\$ 14,746.00
5655-L82	WEBSP MQ V6	2	3,279	\$ 96,506.00	2,691	\$ 81,806.00	\$ 14,700.00	75,400	\$ 6,406.00
5655-S71	ENTERPRISE COBOL V4	2	3,279	\$ 33,344.00	2,574	\$ 26,999.00	\$ 6,345.00	25,656	\$ 1,343.00
5655-A01	IMAGEPLUS OBJECT SERVER V2	1	1,648	\$ 625.00	1,631	\$ 625.00	\$ -	625	\$ -
5655-A02	IMAGEPLUS LIBRARY SERVER V2	1	1,648	\$ 55,000.00	1,631	\$ 55,000.00	\$ -	55,000	\$ -
5655-M32	ENHANCED ACIF	1	1,631	\$ 400.00	1,631	\$ 400.00	\$ -	400	\$ -
5655-002	APPL. SUPPORT FACILITY	1	1,648	\$ 970.00	1,631	\$ 970.00	\$ -	970	\$ -
5655-002	ASF V3 R3 BASE INCL COMP FTR	1	1,648	\$ 3,499.00	1,631	\$ 3,499.00	\$ -	3,499	\$ -
5655-041	ACF/SSP VERSION 4 MVS	2	3,279	\$ 2,702.00	3,262	\$ 2,702.00	\$ -	2,702	\$ -
5665-366	SDF II MVS	2	3,279	\$ 4,138.00	3,262	\$ 4,138.00	\$ -	4,138	\$ -
5688-169	GDQF VERSION 2	2	3,279	\$ 2,164.00	3,262	\$ 2,164.00	\$ -	2,164	\$ -
5688-190	PPFA/370	2	3,279	\$ 520.00	3,262	\$ 520.00	\$ -	520	\$ -
5688-191	OGL/370	2	3,279	\$ 740.00	3,262	\$ 740.00	\$ -	740	\$ -
5748-XXE	DLF DOCUMENT LIBRARY FACILITY	1	1,648	\$ 201.00	1,631	\$ 201.00	\$ -	201	\$ -
5748-XX9	DCF DOC COMPOSITION FACILITY	2	3,279	\$ 3,960.00	1,902	\$ 3,960.00	\$ -	3,960	\$ -
5688-023	COBOL II COMPILER AND LIBRARY	2	3,279	\$ 4,938.00	2,231	\$ 4,938.00	\$ -	4,938	\$ -
Totals				\$ 931,555.00		\$ 823,933.00	\$ 107,622.00	\$ 777,807.00	\$ 46,126.00

VWLC discounts for the Transition Charges for Sysplexes	
Percent of Installed MSUs On zEnterprise 196 (rounded):	50%
VLC discounts Percentage Based on z196 MSUs/Total MSUs:	3.0%
Discount Amount:	\$ (24,718.00)
Estimated VWLC Charges with Transition Plan Discount:	\$ 799,215.00

Two z196s, AWLC: \$777,807USD, Value: \$46,126/month

Machine ID	2097-QQQQ	2097-KKKK							
Machine Types	2817-715 1648 MSUs		2817-715 1648						
Announced MSUs	1648	1648							
Default Machine Sub-Capacity MSUs	1210	1554	0	0	0	0	0	0	0
Technology Dividend Used for Each Machine	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Total All Machines Announced MSUs	3,296								
Total of Sub-Capacity MSUs set for All Machines	2,764								
Sub-Capacity MSUs Percent of Announced MSUs	83.9%		All z196s, AWLC Full Capacity	All z196s, AWLC Will Be Used (VWLC in Yellow Columns Shown for Reference)			Advanced WLC Sub Capacity (AWLC)		
PROID	PRODNM	Count of Machines	MSUs for Full-Capacity WLC	Estimated Price	Sub Capacity WLC MSUs	Estimated SubCap WLC Price	Savings FullCap WLC to Variable WLC	Estimated SubCap Advanced WLC Price	Savings SubCab WLC to Advanced WLC
5694-A01	Z/OS V1 BASE	2	3,296	\$ 238,927.00	2,764	\$ 230,032.00	\$ 8,895.00	219,775	\$ 10,257.00
5694-A01	Z/OS V1 C/C++ WITHOUT DEBUG	1	1,648	\$ 9,884.00	1,210	\$ 8,465.00	\$ 1,419.00	8,465	\$ -
5694-A01	Z/OS V1 RMF	2	3,296	\$ 13,221.00	2,764	\$ 12,157.00	\$ 1,064.00	12,157	\$ -
5694-A01	Z/OS V1 SDSF	2	3,296	\$ 5,813.00	2,764	\$ 5,281.00	\$ 532.00	5,281	\$ -
5694-A01	Z/OS V1 SECURITY SERVER	1	1,648	\$ 11,908.00	1,210	\$ 10,619.00	\$ 1,289.00	10,489	\$ 130.00
5694-A01	Z/OS V1 DFSMS DSSHSM	2	3,296	\$ 22,809.00	2,764	\$ 20,811.00	\$ 1,998.00	20,681	\$ 130.00
5694-A01	Z/OS V1 DFSORT	2	3,296	\$ 4,012.00	2,764	\$ 3,480.00	\$ 532.00	3,480	\$ -
5625-DB2	DB2 V8	2	3,296	\$ 172,380.00	2,691	\$ 160,084.00	\$ 12,296.00	146,970	\$ 13,114.00
5655-M15	CICS TS FOR Z/OS V3.1	2	3,296	\$ 198,636.00	2,691	\$ 184,342.00	\$ 14,294.00	169,596	\$ 14,746.00
5655-L82	WEBSP MQ V6	2	3,296	\$ 88,710.00	2,691	\$ 81,806.00	\$ 6,904.00	75,400	\$ 6,406.00
5655-S71	ENTERPRISE COBOL V4	2	3,296	\$ 31,432.00	2,574	\$ 26,999.00	\$ 4,433.00	25,656	\$ 1,343.00
5655-A01	IMAGEPLUS OBJECT SERVER V2	1	1,648	\$ 625.00	1,631	\$ 625.00	\$ -	625	\$ -
5655-A02	IMAGEPLUS LIBRARY SERVER V2	1	1,648	\$ 55,000.00	1,631	\$ 55,000.00	\$ -	55,000	\$ -
5655-M32	ENHANCED ACIF	1	1,648	\$ 400.00	1,631	\$ 400.00	\$ -	400	\$ -
5655-002	APPL. SUPPORT FACILITY	1	1,648	\$ 970.00	1,631	\$ 970.00	\$ -	970	\$ -
5655-002	ASF V3 R3 BASE INCL COMP FTR	1	1,648	\$ 3,499.00	1,631	\$ 3,499.00	\$ -	3,499	\$ -
5655-041	ACF/SSP VERSION 4 MVS	2	3,296	\$ 2,702.00	3,262	\$ 2,702.00	\$ -	2,702	\$ -
5665-366	SDF II MVS	2	3,296	\$ 4,138.00	3,262	\$ 4,138.00	\$ -	4,138	\$ -
5688-169	GDQF VERSION 2	2	3,296	\$ 2,164.00	3,262	\$ 2,164.00	\$ -	2,164	\$ -
5688-190	PPFA/370	2	3,296	\$ 520.00	3,262	\$ 520.00	\$ -	520	\$ -
5688-191	OGL/370	2	3,296	\$ 740.00	3,262	\$ 740.00	\$ -	740	\$ -
5748-XXE	DLF DOCUMENT LIBRARY FACILITY	1	1,648	\$ 201.00	1,631	\$ 201.00	\$ -	201	\$ -
5748-XX9	DCF DOC COMPOSITION FACILITY	2	3,296	\$ 3,960.00	1,902	\$ 3,960.00	\$ -	3,960	\$ -
5688-023	COBOL II COMPILER AND LIBRARY	2	3,296	\$ 4,938.00	2,231	\$ 4,938.00	\$ -	4,938	\$ -
Totals				\$ 877,589.00		\$ 823,933.00	\$ 53,656.00	\$ 777,807.00	\$ 46,126.00

VWLC discounts for the Transition Charges for Sysplexes	
Percent of Installed MSUs On zEnterprise 196 (rounded):	100%
VLC discounts Percentage Based on z196 MSUs/Total MSUs:	All AWLC
Discount Amount:	All AWLC
Estimated VWLC Charges with Transition Plan Discount:	All AWLC

Recent Changes

- **SMF APAR OA31615**

- Closed 2010-11-12
- Adds zXXP time to SMF89 record at the “product” level
- Today, we know this also laid the ground work for IWP and the GSSP/DB2 Type 2 Connector improvements

- **Integrated Workload Pricing (IWP)**

- 4 Hour Rolling Average MSUs of some WebSphere products are Subtracted From the LPAR’s Full 4 Hour Rolling Average MSUs before computing Simultaneous 4 Hour Rolling Averages for CICS and IMS
- Provides less incremental MLC software increase when adding WebSphere products into existing LPARs
 - ***Reducing a “barrier” to further use of WebSphere products on z***
 - May help current customers also

Wearing My “analyst” Hat: IWP

- IBM would like more sites to use WebSphere products on z
 - Evidence: “Getting Started Sub-Capacity Pricing” for WebSphere Products from 2008, revised in April 2009
 - Sites choose building new LPARs for WebSphere or adding WebSphere to current LPARs
 - Pros and Cons both technically and culturally
- IWP removes the actual 4HRA of Some WebSphere Products from the 4HRA of the LPARs (Only for IMS and CICS)
 - So If you add WebSphere to an existing LPAR the 4HRA of z/OS, DB2, MQSeries and other product probably increases as WebSphere grows. CICS and IMS should not have the same 4HRA increase due to IWP

IWP Requirements

Unique Machine Identifier: 2817#RRRR

z196 Machine: Pass

IWP Control Statement: YES

LPARNAME	LPAR Has APAR OA31615	LPAR Has z/OS 1.10 or Later	LPAR Has IWP Defining Programs	LPAR Has IWP Adjusting Programs
TST1	Fail	Pass	Yes	Yes
PRDD	Mixed	Pass	Yes	Yes
PRDM	Mixed	Pass	Yes	Yes
PRDS	Fail	Pass	No	No

IWP Highest Simultaneous 4HRA Before & After

Unique Machine Identifier: 2817#RRRR

Product ID: 5655-M15 CICS TS V3

Timestamp Before IWP	Original Simult'n's 4HRA	Timestamp After IWP	IWP Simult'n's 4HRA	MSUs Saved With IWP
03FEB2011:12	1193	05FEB2011:02	979	214
03FEB2011:13	1186	05FEB2011:03	970	216
23FEB2011:13	1147	12FEB2011:00	899	248
23FEB2011:12	1139	05FEB2011:01	878	261
07FEB2011:13	1134	11FEB2011:23	875	259
08FEB2011:12	1133	25FEB2011:23	854	279

- “manufactured” test data for this example
- IWP reduces CICS Charges by changing the billable MSUs from 1,193 to 979, a savings of 214 MSUs
 - In This Range with AWLC CICS is 51USD/MSU savings \$10,914/mo
- How is that peak hour 979 MSUs determined?

IWP Math by LPAR by Hour

Start of the Hour	LPAR	IWP Defining Products		Total Subtrac- tions	LPAR IWP 4HRA
		LPAR Orig 4HRA	5655-M74 Subtract Product 4HRA MSUs		
03FEB11:12	TST1	5		0.0	5
	PRDD	907	0.1	298.9	608
	PRDM	286	0.1	218.7	67

03FEB11:12		1198	0.2	517.6	680
05FEB11:02	TST1	4		0.0	4
	PRDD	527	0.1	28.2	499
	PRDM	483	0.0	2.9	480

05FEB11:02		1014	0.1	31.2	983

- Highest original hour was 1,193. TST1 was not running CICS during the hour
- IWP Highest hour also did not have CICS in TST1, resulting in 979 MSUs

- IWP may help IBM begin with new deployments of WAS, Processor Server, Message Broker, Enterprise Service Bus and other WebSphere Products on z
- *You may already have these configurations in your shop and IWP may reduce your CICS and IMS monthly charges*
- If your site meets all the requirements including z196 you can use SCRT to study the potential
- Before you satisfy the requirements there is one tool I'm aware of that can do the analysis ...

WebSphere Products With DB2 type 2 Connectors

- SCRT V19.2.0 User Guide: “SCRT subtracts the four-hour rolling average utilization of the DB2 time, which is used by the GSSP eligible product via the DB2 type 2 connector, from that GSSP product”
 - The DB2 CPU time is also reported elsewhere DB2
 - This further reduces the GSSP product’s billable MSUs, but does not change DB2

WebSphere Products With DB2 type 2 Connectors

- This enhancement in SCRT V19.2.0 was not “announced”, it was published in the SCRT User Guide
- z/OS 1.10+ and SMF APAR OA31615 are required (but not a z196)
- DB2 APARs and other requirements are in the SCRT V19.2.0 User Guide
- *GSSP is already automatically computed by SCRT and when the requirements for this enhancement are met, this is automatic also*

WebSphere Products With DB2 type 2 Connectors

- If this applies at your shop there is an interesting twist:
 - The GSSP MSUs if you have DB2 type 2 Connectors for WAS, Process Server, Msg Broker or Enterprise Service Bus are

SMALLER

Than the IWP MSUs for the same products. IWP does not subtract the DB2 type 2 connector CPU time

One More Page on IWP

- Once your site has met all the requirements of IWP and
if you have the IWP Defining Programs (products) in LPARs with CICS and IMS
then IWP will not raise your software charges
and IWP may lower your software charges
- However from the announcement letter “Your agreement to IWP terms and conditions is required for the receipt of IWP benefits.”
 - The Addendum for Integrated Workload Pricing to Attachment for IBM System z Advanced Workload License Charges (Z125-8702)

z196 and Measured Usage (MULC)

- **APAR OA35460**

- User Impact:

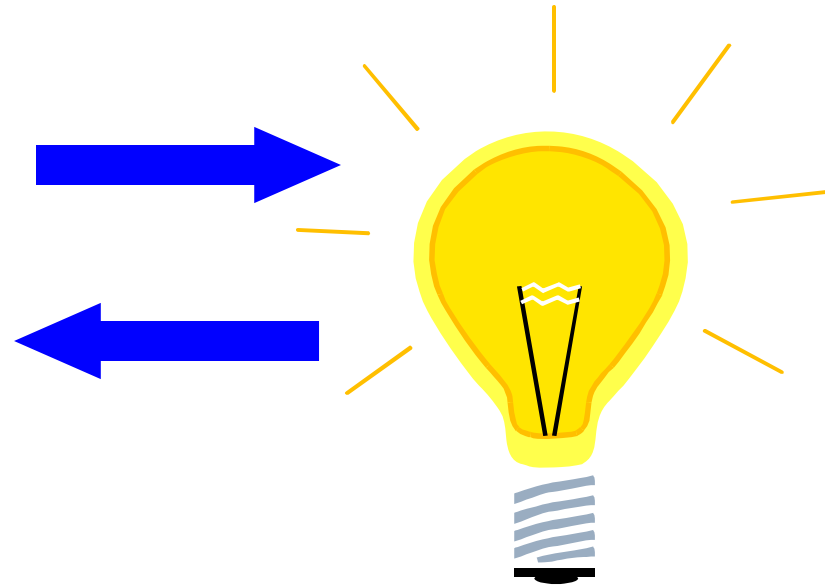
- OA31279 and OA33046 provided the new function, but introduced an error while doing so. The reports generated using z196 data contain invalid SU factor values. The incorrect SU values may lead to ABEND0C4 conditions. ***These reports should not be submitted to IBM for billing purposes.***

- The 4.1.0 version of the IFAURP billing reports contain incorrect SU factor values

- The corrected billing report version is 4.1.1.

- ***At your desk, review APAR OA35460 for specific instructions on using IRAURP on z196s***

Discussion, Questions?



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